



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D205-596-101
Job Sheet 182026



Part No: D205-596-101

Job Qty: 1 ea

Part Name: Fwd Crosstube - Extended Height 39"



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 8/16/18

Job Tracking No:

Due Date: 8/31/18

DAS

Created By: Marie Lajeunesse

Type: Stock

10

Description:

9-89

Note: D205-596-101 REV.C IPP Rev G Removed Bending 05-10-25 JLM IPP Rev:H ECN 1075 08-01-10 DD IPP Rev I 08.04.28 Added bending & mat'l EC verified by: DD IPP Rev:J 08-08-19 remove QC4 DD verified by:EC IPP REV:K 13.11.29 as per dwg DEO B-2 DD VERF:JLM IPP REV:L 18.02.08 AS PER DWG REV.C DD VERF:JFS

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea	8/31/18	8/31/18	0.00	0.00	Start Up Crosstubes-1		bp7
105	HandFXtube	1 pcs	8/31/18	8/31/18	0.00	0.58	HandFinish5		GP 2018-08-24
107	QC	1 pcs	8/31/18	8/31/18	0.00	0.00	QC7-1		GP 2018-08-24
110	CNC Bend Crosstubes	1 pcs	8/31/18	8/31/18	1.84	0.00	CNC Bend Crosstube		GP 2018-08-29
130	QC	1 pcs	8/31/18	8/31/18	0.00	0.00	QC15		
140	Crosstubes	1 pcs	8/31/18	8/31/18	0.00	1.86	Crosstubes-1		GP 2018-08-29
150	HandFXtube	1 pcs	8/31/18	8/31/18	0.00	0.58	Crosstubes-3		GP 2018-08-30
160	QC	1 pcs	8/31/18	8/31/18	0.00	0.00	QC7-1		38 DAS
170	QC	1 pcs	8/31/18	8/31/18	0.00	0.00	QC5		9-89 38
180	SprayPaint	1 pcs	8/31/18	8/31/18	0.00	1.73	Spray Paint		AS 17-1-13 DAS
190	QC	1 pcs	8/31/18	8/31/18	0.00	0.00	QC14		AS MAR 11 2019 68
200	Crosstubes	1 pcs	8/31/18	8/31/18	0.00	1.86	Crosstubes-1		AS 17-3-5 DAS
210	QC	1 pcs	8/31/18	8/31/18	0.00	0.00	QC5		AS MAR 11 2019 68
220	Packaging	1 pcs	8/31/18	8/31/18	0.00	0.00	Packaging3-1		46 MAR 17 2019 68
225	DC	1 pcs	8/31/18	8/31/18	0.00	0.00	DC		9-89 MAR 15 2019
230	QC21-FG	1 Ea	8/31/18	8/31/18	0.00	0.00	QC21		DAS 21 MAR 15 2019

Part Op 105 - INSIDE AND OUT

Descriptions: 110 - Bend as per Dwg D2889 using CNC bender program

130 - Mark 38.3" for cutting from tangential line in the straight section from D2889 as per Dwg wall template. ***Identify off-cuts with batch number & part number and bring them to cnc lathe***

140 - 1-Cut as per Dwg D205-596-101 2-Deburr & Inspect for surface damage. Polish cut surface.Scribe part # and Batch # on one end of tube.

150 - ***IMMEDIATELY AFTER GRINDING***

180 - 1-Prime inside and outside per QSI 005 4.2 PRIMER BATCH: 138762 2- Paint outside as per dwg QSI 005 4.2 PAINT BATCH: 5140325

200 - 1- Lightly scuff the bonded area using a 180 grit sand paper and clean the area with 41058 wash 'n' wipe 2- Apply Proseal as per dwg D205-596-101. A/R Proseal 890 B-2 Batch: 5146134 EXP: 10/19 3- Install clamps as per dwg (Note 12)Torque clamps 80 to 100 in-lb as per dwg and Note 13)

210 - ***PRIOR TO PACKAGING RECHECK TORQUE ON CLAMPS AFTER PROSEAL HAS CURED 72HOURS.***

220 - Identify and pack for shipping as per PPP D205-596-101

225 - Photocopy D205-594 bluefile & type labels per PPP D205-596-101 CHG003

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																				
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Job BOM				
Part / Item	Component Name	Quantity	Operation	Container
D6005-180	Crosstube Material	1 Ea (1 ea)	90-Start up Operation	
D2893-1	Support	2 Ea (2 ea)	200-Crosstubes	
D3595-063-450	Rubber Cushion 0.63" Wide X 4.50" Long	4 Ea (4 ea)	200-Crosstubes	
MS21920-25	Clamp	4 Ea (4 ea)	200-Crosstubes	

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D6005-180 <i>B103676</i>	①	13	0
200-Crosstubes	D2893-1 <i>S155672</i>	②	13	0
	D3595-063-450 <i>S150042</i>	④	94	0
	MS21920-25 <i>S142130</i>	④	116	0

Part Specifications				
Specifications could not be found.				

Plex 8/16/18 7:20 AM Dart.lajeunesse.marie

DART
AEROSPACE

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Container No: S104553



Part: D205-596-101

Job No: 182026

Serial No/Batch: S104553

Revision: C/F

Inspector:

Exp Date:

Instructions: TC STC SH03-6 Issue 4, FAA STC SR01742NY 13/11/04, EASA STC

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

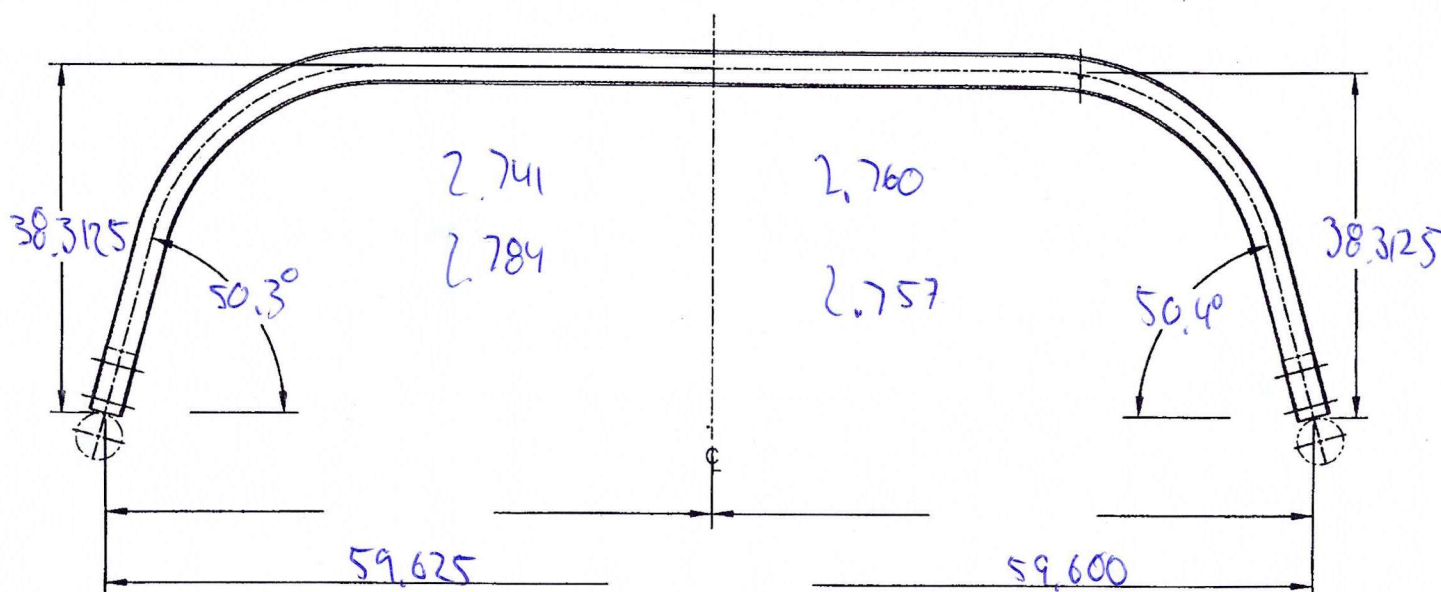
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Work Order update only ☐

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Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

DART AEROSPACE LTD		Work Order:	182026
Description: Crosstube High-High Fwd		Part Number:	D205-596-101
Inspection Dwg: D205-596-101	Rev: B	Page 1 of 1	

Required Dimension	Min	Max
Height	38.2	38.4
1/2 Span	59.5	59.7
Angle	49	52
Total Span	119.0	119.4
Bending Passes	3	--
Crushing	--	6%



	Side A	Side B
Bending Passes	11	10
Crushing	0.8%	0.05%
Comments		

QC15 Inspection	EB
Date	18-08-22

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	08.04.21	Dwg Rev updated	KJ/JM	
C	12.04.16	Added bending, crushing dimensions	KJ	

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OTHER : ☐					

PARTS LIST:

ITEM	QTY -101	QTY -101B	PART NUMBER	DESCRIPTION
	X		D205-596-101	CROSSTUBE ASSEMBLY, HI-HI FWD
		X	D205-596-101B	CROSSTUBE ASSEMBLY, HI-HI FWD, 214
1	1	1	D6005-180	CROSSTUBE
2	2		D2893-1	SUPPORT
3	4	4	D3595-063-450	RUBBER CUSHION
4		2	D5017-1	SUPPORT, 214 FWD
5	4	4	MS21920-25	CLAMP
6	A/R	A/R	PROSEAL 890 B-2	SEALANT (OR AMS-S-8802 CLASS B-2)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURE FROM D6005-180
FINISHED LENGTH = 149.60 ± 0.02
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART 005 4.2
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS
- 7) WEIGHT: 44 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE
- 9) BEND PROGRESSIVELY WITH A MINIMUM OF 3 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) TO INSTALL D2893-1 / D5017-1 SUPPORTS: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 12) INSTALL MS21920-25 CLAMPS WITH D3595-063-450 RUBBER CUSHIONS TO SECURE D2893-1 / D5017-1 SUPPORT. ENSURE CLAMP MECHANISMS ARE ON TOP SIDE OF CROSSTUBE.
NOTE: IT IS ACCEPTABLE TO SUBSTITUTE MS21920-25 CLAMPS WITH LONGER (MS21920-26) OR SHORTER (MS21920-24) CLAMPS TO ACCOMMODATE VARYING DIAMETERS. ENSURE THERE IS A MINIMUM OF 1.5 THREADS IN SAFETY ON THE NUTS.
- 13) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.

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WORK ORDER

NO. 182026 u15
18-08-16

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2010 JAN 24
ECN 18-525

C	REFORMAT, ADD SHT 3, HEIGHT/WIDTH TOL IS. ±0.13 WAS ±0.1, ADD TOTAL WIDTH DIM (B4-2, B4-3), CLAMP ORIENTATION FLIPPED (A5-2, A5-3), INCORP ALL DEO'S	CP	17.08.23
B	SUPPORT NOW MAGNOBONDED; REMOVE D2856-600-851 ABRASION STRIP; UPDATED NOTES; ADDED D3595-063-450 CUSHION; MS21920-25 WAS MS21920-24	MB	07.12.03
A	NEW ISSUE	DS	02.05.27
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED	AS		
MFG. APPR.	DS		
APPROVED	WM		
DE APPR.			
DATE	17.08.23		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		REV. C SHEET 1 OF 3	
DRAWING NO. D205-596-101		SCALE NTS	
TITLE CROSSTUBE ASSEMBLY, HI-HI FWD		COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

DQA: _____ Date: _____

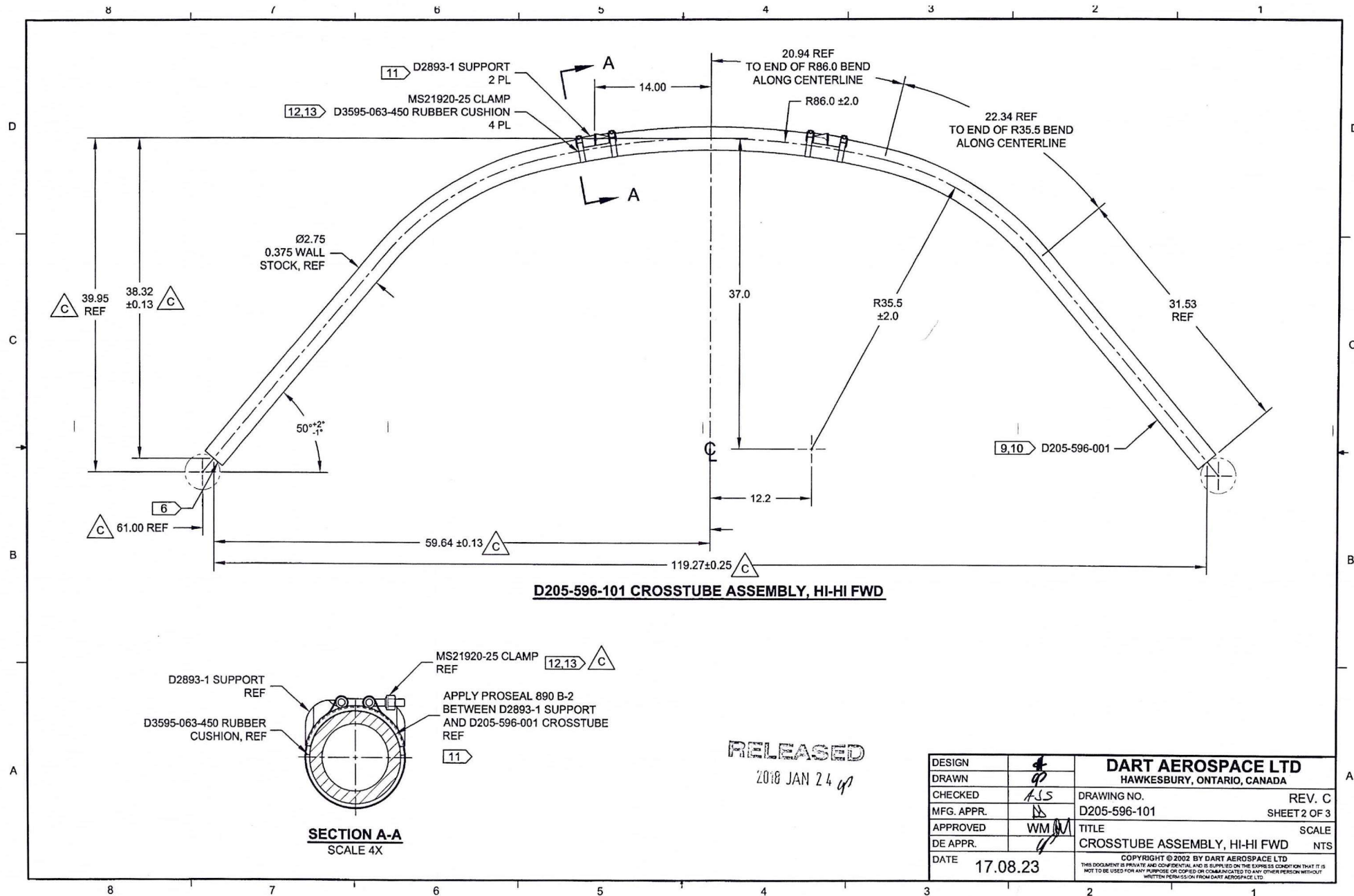


WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : ☐					



DQA: _____ Date: _____

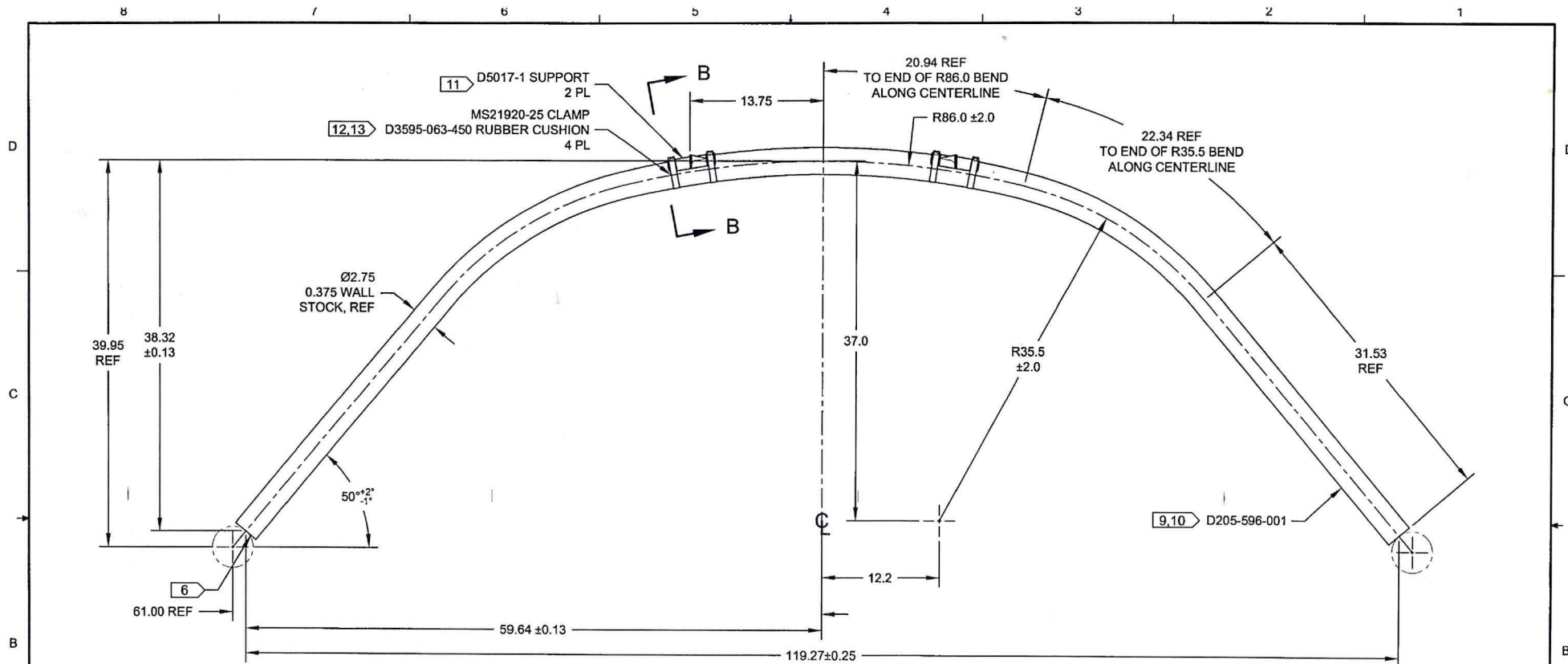


WORK ORDER NON-CONFORMANCE / UPDATE

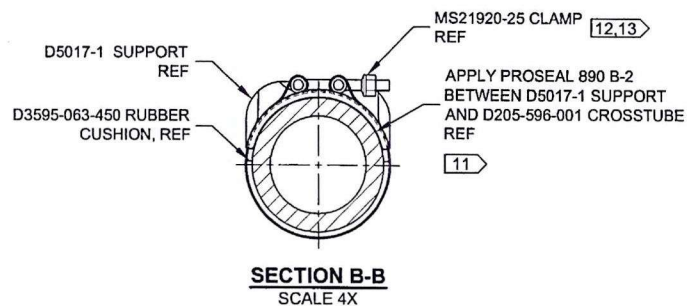
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OTHER : ☐					



D205-596-101B CROSSTUBE ASSEMBLY, HI-HI FWD, 214 C



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2018 JAN 24 *up*

DESIGN	<i>4</i>	DART AEROSPACE LTD	
DRAWN	<i>up</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>ASS</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>N</i>	D205-596-101	SHEET 3 OF 3
APPROVED	<i>WMOM</i>	TITLE	SCALE
DE APPR.	<i>up</i>	CROSSTUBE ASSEMBLY, HI-HI FWD	NTS
DATE	17.08.23	COPYRIGHT © 2002 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

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WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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